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The Influence of Balance Within the Competing Values Framework and School Academic Success on Teacher Retention

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INTRODUCTION

There is abundant theoretical and empirical literature exploring the economics and sociology of teachers' career decisions (staying or leaving). To date, several studies have explored the issues of teacher attrition and retention. One strand of research uncovers important associations between teacher turnover and organizational/contextual factors (Loeb et al., 2005), including compensation structure (Murnane & Olsen, 1990; Hanushek et al., 2004; Clotfelter et al., 2008; Dolton & van der Klaluw, 1995, 1999), mentoring programs and internship status (Smith & Ingersoll, 2004), accountability pressures (Grossman & Thompson, 2004), district hiring practices (McCarthy & Guiney, 2004), the school sector (Stuit & Smith, 2012), and student population that teachers serve (Scafidi et al., 2002, 2007). For example, Smith and Ingersoll (2004) suggest that new teachers are more likely to remain in their schools of origin when they are mentored by teachers in their subject areas. Another strand of work has explored the role of teacher-specific factors, including age and teaching experience (Hanushek et al., 2004), certification status (Guarino et al., 2006), and demographic characteristics (Newton, Rosario, Fuller & Dauter, 2010). For example, Hanushek et al. (2004) examine data on more than 300,000 Texas public school teachers from 1993 to 1996 and conclude that those who left the Texas school system were generally either young teachers in their first two years of teaching or experienced teachers reaching retirement age.

School climate resulting from working conditions is closely related to teacher retention (Borman & Dowling, 2008). According to Ingersoll (2001), teachers tend to leave their current teaching assignments when they encounter environments that lack essential professional supports that include: (1) support from school leadership; (2) organizational structures and workforce conditions that convey respect and value for them; and (3) induction and mentoring programs for new and experienced teachers. Studies have shown that in addition to compensation (Hanushek et al., 2004; Lankford et al., 2002), working conditions substantially

influence teachers' career decisions even after accounting for the proportions of minority and disadvantaged students (Boyd et al., 2011; Ladd, 2011). Other studies have pointed to the quality of school leadership as the most important determinant of teachers' career decisions (Boyd et al., 2011; Grissom et al., 2013; Ladd, 2009). In particular, analysis using the North Carolina TELL survey found the principal's leadership and relationship among colleagues are related to teachers' stated career intentions, independent of the school's student demographic characteristics (Ladd, 2009). Johnson et al. (2012) also using TELL data, noted that the conditions that matter most in deciding to stay include the school's culture, the principal's leadership and relationships among teachers.

Some of the most important research that elucidates the relationship between school climate and school improvement efforts has emerged from a multi-year study of schools in Chicago (Bryk et al., 2010). Bryk and Schneider (2002) concluded that the degree of "relational trust" (good social relationships) between teachers, and between teachers and students, is related to achievement. Clearly any meaningful analysis of teachers' working conditions must recognize the full range and interdependence of the factors that define the specific components of school climate, from professional capacity to instructional guidance and parent-school-community ties (Bryk & Shneider, 2002; Bryk et al., 2010). More recent large-scale empirical studies by Ladd (2009), Johnson, Kraft, & Papay (2012), and Ferguson and Hirsch (2014) for the MET Project utilized survey data from various states to estimate the impact of teaching and learning conditions on academic achievement. Using school-level value-added scores and TELL Survey data, Ladd (2009) found that working conditions predict school-level value-added scores in mathematics and, to some extent, in reading, over and above the variation explained by school-level student and teacher demographic characteristics. Of the five working conditions that Ladd examined, school leadership emerged as the most important factor of achievement in mathematics, whereas teachers' ratings of facilities had the strongest association with reading achievement. Johnson et al. (2012) found that in disadvantaged schools, better-perceived

teaching conditions are associated with higher student academic outcomes. Finally, Ferguson and Hirsch's (2014) evaluation of the Bill & Melinda Gates Foundation's MET project found significant connections between the four areas of teaching conditions in the TELL survey (namely, student conduct management, demand on time, professional autonomy and professional development) and student value-added gains. These empirical studies demonstrate that teachers' ability to deliver effective instruction and facilitate learning for their students is deeply affected by the context in which they work, but also that this context may vary greatly from one school to another.

These studies guide our work in two ways. First, previous studies suggested that school level differences in teacher perceptions of their career intentions were associated with actual turnover patterns in schools (Boyd et al., 2005, 2007, 2011). These studies capitalize on new measures of the school context constructed from teacher responses to district and state-wide surveys. Researchers in this area have combined information from surveys about teachers' working conditions with data about whether they plan on staying in their current teaching assignment (Ladd, 2009, 2011; Boyd et al., 2011; Johnson et al., 2012). Similarly, because data from Tennessee did not allow us to link teachers' survey responses to their actual career decisions, we relied on their stated intentions, in keeping with prior studies that confirm self-reported intentions are, in fact, strong predictors of teachers' actual decision to stay or vacate their current positions. Second, to avoid inflating or deflating individual teacher response, we follow prior studies such as Boyd et al. (2011) that aggregated the results of teachers' professional intentions within the same school to provide a measurement that reflect the collective perceptions of a respondent group (i.e., teachers in elementary and middle schools).

Yet, despite the contribution and the growing interest in school climate and working condition improvement, there remains no consistent agreement in the literature on the proper definition, measurement, and disparity in its use by practitioners and academics (Ladd, 2011;

Johnson et al., 2004). Measuring working conditions is complex, with many of the factors in the different domains appearing to be interrelated, making it difficult to understand relationships between variables. More recent empirical studies have sought to identify and include a wide range of factors such as school processes and school climate items when examining school-level outcomes (i.e., teacher retention and school achievement) (Johnson et al., 2012). However, features of the working conditions in these studies have not captured an integrated model of organizational effectiveness that embodies the paradoxes and competing demands of high performance. This study seeks to begin to fill the gap in research by examining whether schools with higher percentage of teachers staying are associated with high-performing schools and balanced competing values framework (CVF) profile.¹

The competing values framework (CVF) is a general organizational model of effectiveness used in a wide array of academic disciplines (i.e., business and management, sociology and public policy) (Quinn & Rohrbaugh, 1983). The framework is widely accepted but it has limited empirical tests/applications in a broad range of organizational research, particularly in an educational setting. On the other hand, school climate dimensions have been recognized individually in organizational literature, but they have never been presented as integrated elements of a single conceptual framework and as a model to measure organizational effectiveness.

Using data on teachers' professional intentions and the conditions of work in Tennessee schools, we confirm these recent findings. The primary aim of this study is to use the survey items from the TELL Tennessee Survey (2013) using the Competing Values Framework (CVF) (Quinn and Rohrbaugh's model of organizational effectiveness) to determine whether teachers' observations about a set of topically organized school climate dimensions and school performance levels are associated with their immediate professional plans. Specifically, the

¹ CVF is a widely-used multi-dimensional model of organizational effectiveness that has found its application to education research by way of school climate and working conditions.

study sets out to answer three research questions: Does teacher retention differ for schools with balanced and unbalanced CVF profiles? Does teacher retention differ for schools in different achievement groups (priority, norm and performance)? Does teacher retention a function of achievement groups and CVF profiles after controlling for school poverty?

In the Tennessee TELL Survey, working conditions are found to play an important role in the state's policy development guidance.² While statewide teacher retention rates tend to fall between 85 and 95 percent, there is considerable variation across districts in overall retention. School conditions are found to be significantly related to retention rates of highly effective teachers. (TNDOE, 2014). Highly effective minority teachers are also more likely to leave their schools than other highly effective teachers. These findings demonstrate how important it is to focus on retention efforts. In collaboration with the New Teacher Center (NTC), the Tennessee Department of Education established an initiative to evaluate the working conditions of teachers in order to make strides toward improving teacher retention rates in the state. The primary goal of the initiative is to provide school systems with data to drive their decisions toward improvement (New Teacher Center, 2013a). Tennessee is arguably leading the way nationwide in K-12 education reform. Education reform initiatives such as Race to the Top, Common Core State Standards now TNReady, Response to Instruction and Intervention (RTI2), value-added teacher evaluation, and a plethora of other state and district procedures and expectations may appear to support the broad state goals of education, but with regard to public school teachers and administrators, such initiatives can be a daunting challenge to implement within the school setting as each is different with varying conditions and capacity to improve. Knowing the perspectives of teachers with regards to teaching and learning condition and the support and environment within their school can help policymakers and practitioners understand what it will take to improve. While federal and state accountability mandates are clear about student

² For more details, see TNDOE (2011) "TELL Tennessee" survey results set standard and strategy available at <https://news.tn.gov/node/7103>.

performance results that schools are expected to achieve, they often do not provide the schools with much guidance in terms of how to accomplish these objectives.

In this paper, we describe the competing values framework (CVF) in more detail, followed by the data and methodological approach. We then present the results and conclude with a discussion of the implications and findings.

Theoretical Framework

The competing values framework (CVF) views the assessment of organizational effectiveness as an exercise grounded in values. CVF creates a grid of four quadrants which is the explanation of the competing values inside the organization. Based on these competing values, Quinn and Rohrbaugh (1983) identify four models of effectiveness: rational goal, internal process, open system and human relations. The rational goal quadrant emphasizes productivity, performance, goal fulfillment and achievement. The purpose of schools with emphases on the rational goal tends to be the pursuit and attainment of well-defined objectives. Effectiveness criteria measured using the TELL survey are production and direction item scales. The internal process goal quadrant emphasizes internal efficiency, uniformity, coordination and evaluation. The purpose of schools with emphases on the internal process goal is on maintaining stability and implementing rules and regulations. Effectiveness criteria measured using the TELL survey are coordination and monitoring item scales. The human relations quadrant emphasizes cohesiveness, trust and participation. Teachers tend to be participative, considerate, and supportive, and they facilitate interaction through teamwork and mentoring. Effectiveness criteria measured using the TELL survey are facilitation and mentoring item scales. The open systems goal quadrant maintains a primary focus on external support, growth, resource acquisition and adaptation to the external environment. Effectiveness criteria measured using the TELL survey are innovation and brokering item scales.

Several assumptions underlie the competing values framework (CVF). First, the four quadrant goals described should be thought of as a set of "common criteria" for benchmarking the effectiveness of organizations (Cameron, 1986; Cameron et al., 2006). Schools are unlikely to reflect one quadrant; rather, we would expect to find combinations of each quadrant goal, while some quadrant goals being more dominant than others. As Battle for Kids (2010) and others have found, paradoxical combinations of goals and values are often found in schools. Especially as it speaks to "mastering the paradoxes and competing demands of high performance" (Quinn, 1988; Cameron & Freeman, 1991; O'Neil & Quinn, 1993), the CVF approach may be of particular benefit to those teachers interested in a more nuanced sense of their strengths and weaknesses for reforming "the school in its entirety" (Levin, 2002) and for "getting to scale with good educational practice" (Elmore, 1996). Quinn's (1988) competing values framework (CVF) subscribes to the idea that the effectiveness of teachers increases when they display more types of behavior. Prior studies by Cameron and Quinn (1999, 2006, 2011) have noted that most organizations are dominated by one or two of CVF's quadrant goals. An extensive review of 17 models of organizational effectiveness by Steers (1975) reveals that not all roles in the CVF's quadrant goals are pursued with equal effort, and he suggests differential weights on various roles depending on the running goals of an organization. Thus, teachers could no longer depend on one type of teacher behavior to cope with all the demands of the school environment. Teachers are faced with competing demands and expectations and the most effective teachers are the ones able to perform several role behaviors. Therefore, the framework implies that the definition of an effective teacher does not imply being either a mentor, or a broker or a producer, but to be able to perform each of these roles when necessary. Inside each quadrant there are two role behaviors with total eight role behaviors which should be possible to perform by effective teachers.

A second underlying assumption of the CVF is the importance of balance. When one quadrant is overemphasized (internal vs external; flexibility vs. control), a school may become dysfunctional and the strengths of the quadrant may even become weaknesses. For example, too much flexibility or spontaneity can lead to arbitrary results; too much uniformity and structure can lead to stagnation and rigidity; too much external focus can result in neglect of internal efficiencies; and too much internal focus can result in teachers being insulated from developments in the profession. The CVF emphasizes that the pursuit of a single criteria of organizational effectiveness is less likely to become effective than is a broader and a more balanced approach. The CVF stops short of the normative prescription that the most effective school is one that has integrated the characteristics of all goal quadrants, but nonetheless recognizes that balance represents the capacity to respond to a wide set of environmental conditions.

Thus, this study utilizes teachers' judgments about a set of topically organized school climate dimensions (TELL survey) to determine which schools in different achievement groups tend to be more balanced across the goal quadrants. We also seek to determine whether teacher retention differs for schools with balanced and unbalanced CVF profiles. We aggregate to the school level teachers' responses to the dimensions of school climate to determine how much variance in teacher retention is a function of a school's CVF balance profile.

METHOD

Originally developed in 2002 by the New Teacher Center and the centerpiece of its Teaching and Learning Initiative, the Teaching, Empowering, Leading and Learning (TELL) questionnaire is presently regarded as one of the more useful and psychometrically robust measures of school climate nationwide (Clifford et al., 2012; Swanson, 2011). Over the past decade, the reach of the survey has extended to 20 states in addition to Tennessee, providing

information to both policymakers and practitioners about the following eight research-based constructs (New Teacher Center, 2013b, 2014):

- Time—Available time to plan, to collaborate, to provide instruction, and to eliminate barriers in order to maximize instructional time during the school day
- Facilities and Resources—Availability of instructional, technology, office, communication, and school resources to teachers
- Community Support and Involvement—Community and parent/guardian communication and influence in the school
- Managing Student Conduct—Policies and practices to address student conduct issues and ensure a safe school environment
- Teacher Leadership—Teacher involvement in decisions that impact classroom and school practices
- School Leadership—The ability of school leadership to create trusting, supportive environments and address teacher concerns
- Professional Development—Availability and quality of learning opportunities for educators to enhance their teaching
- Instructional Practices and Support—Data and support available to teachers to improve instruction and student learning. (New Teacher Center, 2013b)

According to the official TELL Tennessee website, over 62,000 or 82 percent of educators in the state responded to 2013 iteration of the survey, with a participation rate of 84 percent at the elementary level, 85 percent at the middle level, and 77 percent at the high school level (New Teacher Center, 2013b). In terms of responding institutions, more than 90 percent of the schools surveyed met the requirements to receive individual school-level data reports. The discussion shows the statistical properties of the TELL survey items and the theoretical constructs they represent in the CVF. For each scale, the internal consistency

reliability exceeds 0.7, which suggests that the related items capture the underlying constructs. In Appendix A, we describe these items in more detail and present the TELL survey items on which each scale is based.

Rational Goal Quadrant ($\alpha = .96$) —Production scale ($\alpha = .91$) and Direction scale ($\alpha = .92$)

In the rational goal model, a climate of “production” is task-oriented and work-focused, one that motivates members to increase their output and accomplish stated goals. A climate exhibiting “direction” is one that foregrounds planning, goal setting, articulating objectives, and establishing clear expectations.

Internal Process Quadrant ($\alpha = .89$)—Coordination scale ($\alpha = .91$) and Monitoring scale ($\alpha = .85$)

In the internal process model, a climate exhibiting “coordination” is one focused on structure, and scheduling and is especially attentive to logistical and housekeeping issues. Regularly checking on performance and completing the concomitant paperwork are behaviors characteristic of a climate where “monitoring” is valued.

Human Relations Quadrant ($\alpha = .93$)—Facilitation scale ($\alpha = .96$) and Mentoring scale ($\alpha = .86$)

In the human relations model, a climate of “facilitation” encourages teamwork and cohesiveness and sees to it that interpersonal conflict is managed effectively. A climate that values “mentoring” engages in the development of people through a caring, empathetic orientation.

Open Systems Quadrant ($\alpha = .89$) —Innovation scale ($\alpha = .85$) and Brokering scale ($\alpha = .80$)

In the open systems model, a climate of “innovation” values personal and group creativity and facilitates adaptation and change. Maintaining the organization's external legitimacy and obtaining external resources are the central concerns of climate where “brokering” is important.

Independent Variables

School Performance Level. Constructed from the use of publically-accessible Tennessee Department of Education (TDOE) datasets whose contents are concurrent with the 2013 administration of the *TELL Tennessee*, three groups of schools are employed in this study and are designated by performance level as either “Priority,” “Norm,” or “Performance” with respect to specific criteria. The “Priority” and “Performance” subgroups of schools are derived and sampled from two master lists of state-identified elementary and middle-level institutions that had scored among the bottom 5 percent ($n = 68$) and top 5 percent ($n = 57$) in terms of standardized student assessments and related performance metrics. Drawing from the remaining population of Tennessee elementary and middle-level institutions, schools designated as “Norm” schools ($n = 61$) are selected for inclusion in the study if their three year average NCE scores are within one point more or one point less than the average in state-assessed mathematics ($M = 54$) and state-assessed reading ($M = 51$), this information is extracted from yet another TDOE dataset.

With the three groups of schools identified according to the criteria previously described, a systematic random sample of approximately half of each group is selected using SPSS 23. In the hopes of keeping the group sizes nearly equal and in light of “missing” TELL reports because of schools failing “to reach the minimum 50 percent response rate in order to have their own data available,” each of the three groups is slightly oversampled, with exactly 30 schools finally selected to represent the “Priority” schools achievement level (Mathematics NCE: $M = 37.0$, $SD = 3.7$; Reading NCE $M = 29.8$, $SD = 3.7$), 31 schools chosen to represent the “Norm” schools achievement level (Mathematics NCE: $M = 54.1$, $SD = 0.8$; Reading NCE $M = 50.1$, $SD = 0.8$), and 30 schools chosen to represent the Performance schools achievement level (Mathematics NCE: $M = 69.7$, $SD = 4.1$; Reading NCE $M = 70.0$, $SD = 5.3$). Across all 91 schools, the Spearman rank correlation between school performance level coded as “1 “or

Priority, “2” for Norm, and “3” for performance approaches unity for both mathematics ($\rho = 0.946$) and reading ($\rho = 0.945$).

CVF Scale Means, Quadrant Means, and “Balance” Profiles. For each of the 24 *TELL Tennessee* items presented in Appendix A, weighted means are derived from the percentages given in each of the sampled schools’ online reports in three steps. First, the response-level percentages given in each report and presented for TELL items are reconstituted as frequencies by multiplying each percentage by the number of respondents to that item. Second, each of the reconstituted frequencies is multiplied by the weight associated with that response level—“1” for strong disagreement, “2” for disagreement, 3 for agreement, and 4 for strong agreement—and the four weighted values is summed across. Finally, the weighted item mean is computed by dividing the summed weighted values by the total number of respondents to that item.

To arrive at each of the eight CVF scale means, the means obtained for each of the scale’s three constituent items are themselves averaged, once each of these prospective scales had been vetted for internal consistency reliability (see Appendix A and Table 1). Similarly, to arrive at each of the four CVF quadrant means, the means obtained for each of the quadrant’s six constituent items are themselves averaged and the internal consistency reliability of the quadrant mean checked (see Table 1). Finally, to compute each school’s balance profile, the quadrant means for all 91 schools are computed and each of the quadrant means obtained for that school compared to those respectively obtained for the aggregate: specifically the Rational Goal Quadrant ($M = 3.2$, $SD = 0.30$), the Internal Process Quadrant $M = 3.1$, $SD = 0.22$), the Human Relations Quadrant ($M = 3.0$, $SD = 0.30$), and the Open Systems Quadrant ($M = 3.2$, $SD = 0.24$). If a school’s quadrant score is equal to or exceeded the quadrant score for the aggregate, the school received a value of “1” for that quadrant and a value of “0” if it did not meet that threshold. Apropos the CVF literature on “balancing” the competing demands of

effectiveness, thus a school's CVF profile is considered to be balanced if the sum across quadrant mean thresholds is either four (perfect) or three (good): a result characterizing slightly more than 40 percent of the schools sampled (41.7 percent). With respect to unbalanced profiles, some 7.7 percent of the sampled schools are at or above the quadrant mean on two quadrants, slightly more than half of them (51.6 percent) scored at above the quadrant mean either once or not at all. As can be seen in Table 1 and Figure 1 to 3, balanced CVF profiles are in most cases characteristic of the 30 Performance institutions (70 percent), but much more rarely observed among the 30 Priority (23.3 percent) and 31 Norm schools (29 percent).

Dependent Variable

Teacher Retention. As is done in work completed by Johnson and her colleagues (2012) using Massachusetts TELL data, responses to a single item are employed to measure teachers' professional intentions. Offered six descriptions of their "immediate professional plans," teachers are asked to select from a range of possible options ranging from "Continue teaching at my present school," to moving to another school or district, to "Leave education entirely." At each school, the percentage of teacher respondents who indicated no change in their current status are classified as the school "stayers" as opposed to the remaining mix of school "movers" and "leavers."

Covariate

Poverty. To secure information about each sampled school's locale, the size of its faculty, its student enrollment, and the number of students on free and reduced lunch, the federal Common Core of Data (CCD) is consulted and the results merged with TELL Tennessee and Tennessee Department of Education (TDOE) information. While not all of the CCD data are employed, a proxy for each school's "poverty" level is constructed by summing across the number of students on free lunch and reduced lunch, dividing that sum by the school's

enrollment, and multiplying by 100. Consistent with the school effectiveness literature, inspection of the school outcomes presented in Table 2 suggests robust relationships not only between poverty and school performance level ($\rho = -0.93$, $p < .001$, $n = 91$) but also poverty and CVF “balance” ($r_{pb} = -.358$, $p < .001$, $n = 91$).

ANALYSIS

With poverty included as the covariate and the percentage of teachers whose intent is to “continue teaching at my current school” serving as the dependent variable, a three- by two-level Analysis of Covariance (ANCOVA) is conducted with school performance level and CVF balance serving as the two factors, respectively. As shown in Table 2, an initial run of the data suggested that, despite a robust correlation with the outcome ($r = -.545$, $p < .001$, $N = 91$), poverty be dropped from the analytic model ($F(1, 84) = .071$, $p = .400$), and that a two-way Analysis of Variance on the means shown in Figures 1 to 3 be performed instead. When the interaction term in the ANOVA model also proved not to be statistically significant ($F(2, 85) = 1.88$, $p = .160$), a second ANOVA model that employed only the two main effects is conducted on the percentage of “stayers,” with both school performance level ($F(2, 87) = 41.53$, $p < .001$), and CVF balance ($F(2, 87) = 14.69$, $p < .001$) proving to be highly statistically significant and collectively to explain roughly 60 percent of the variance in the outcome. As noted in Table 2, the effect of having a balanced as opposed to an unbalanced CVF school profile on the mean percentage of teachers staying at the school slightly exceeded a full standard deviation ($g = 1.02$), while the effect on “staying” of being in a high-achieving “Performance” school environment is found to be more than one and one-half standard deviations compared to being in a school environment representing state “norms” ($g = 1.65$) and in excess of two full standard deviations compared to being in a low-achieving “Priority” environment ($g = 2.11$). While there is no statistically significant difference in the mean percentage of stayers at “Norm” and “Priority”,

the effect, as noted in Table 2, is still computed to be about seven-tenths of a standard deviation ($g = 0.69$).

DISCUSSION

Coupled with results from previous studies linking teachers' professional plans to school climate, our findings support the presence of a significant positive relationship between a balanced CVF profile and teachers' decision to stay or leave. Our results suggest that a balanced CVF profile is associated with teacher retention by helping to create school environments that are conducive to learning. Future work should delve further into the connection between a school's CVF profile and teacher retention net of the effects of other school- and teacher-level characteristics (i.e., percent of beginning teachers). While it is useful for policy to know that a school's CVF profile matters, much more useful would be to know precisely what role behaviors in each quadrant of the CVF are associated with teachers' intention to leave or stay. Identification of such role behaviors would allow schools/districts to focus on developing balanced CVF profiles through school-wide professional development. It would also provide state and district policymakers with guidance on how to recruit and select potential teachers who have the capacity to build productive working environments for teachers and their students.

Even without yet being able to identify the specific teacher behaviors/roles that comprise a balanced CVF school profile, the variation in teacher "stayers" by CVF profile and school performance level is an important consideration for policymakers. Through its relationship with teachers' intention to leave or stay, and through school climate items that define each school's CVF profile as well, the effect of the CVF "balance" on the percent of intended teacher stayers is slightly more than a full standard deviation. A balanced CVF profile should provide a school with the breadth of role behaviors required to appropriately interact with the multitude of different conditions that it might encounter (Quinn, 1988) that would result in a higher percentage of

teacher stayers. The conclusion from this study is that teachers' intentions to leave their school result in part from inequities in school characteristics, including the CVF "balance." The equity implications of having the highest potential of teachers leaving schools that are already facing the greatest challenges lends special urgency to the identification of policy strategies to promote teacher retention in low-performing schools. Without comprehensive and sustained efforts to improve teacher working conditions (a balanced CVF school profile) much of the state's notable school reform efforts could go unfulfilled.

There are several limitations to be noted regarding this study. First, because the study deals with teacher perceptions, we cannot necessarily draw the conclusion that improving teacher retention or other working conditions in any school will consequently encourage teachers to stay and reduce teacher retention. More rigorous analysis using, for example, data on teachers over two time periods (i.e., TELL Surveys in 2011 and 2013) that could observe whether a good percentage of teachers actually remain teaching in the same school might get us closer to drawing such conclusions. The data employed here is a snapshot of topically organized school climate responses. Longitudinal data linking teachers to schools as they remain in the same schools would allow for analysis of how the same teachers respond to school climate items tied to balanced CVF profiles.

Longitudinal data would also make it possible to examine the implications of time varying factors on teacher retention. For example, schools at high risk for financial distress or closure, variation in targeted school improvement efforts/interventions under ESEA waivers, and degree of school-level implementation of teacher evaluation, may have implications for the CVF "balance" that are beyond the scope of this study. Because the data used here are confined to the TELL 2013-14 school year, an additional area of potential importance that is beyond the scope of what can be examined in this analysis is the impact of approved ESEA flexibility

request (February 9, 2012).³ Besides increasing accountability pressures on teachers, ESEA waivers contain a number of provisions with direct implications for teacher retention, including use of multiple measures of professional practice aligned to student growth and achievement gaps, which could result in the loss of teaching positions for some schools, and the potential for teacher dismissals for those who are considered ineffective. ESEA waivers also set out plans for schools in need of improvement that can change the role of teachers and determination of a school's effectiveness status. Because Tennessee applied for and received USED approval of the ESEA flexibility waiver after 2012, the TELL survey data coincide the time period in which schools could feel the direct effects of many of these provisions. The impact of ESEA waivers on teacher work decisions and CVF "balance" will be a fruitful area for future inquiry.

A second limitation is the study's reliance on survey data that are often prone to unobserved heterogeneity. We do not know, for example, whether teachers report their true intent to stay or leave, or even if they represent actual behavior. It is often a practical challenge to collect data on teacher professional intentions (plans) and comparable actual behavior of the same sample of teachers. We also suspect that teachers with different career intentions view working conditions differently — which can have consequences for whether they stay in teaching or not. We suspect that out-of-field assignments, teachers in special education classrooms, as well as high school teachers can have powerful impact on teachers' perceptions of working conditions – and subsequently on their willingness to stay in a certain school and teach effectively. Our school-level aggregate data holds constant all other potential explanations. Likewise, our school-level averages for each CVF item scale allows us to examine measures of the work context that are not influenced by reporting bias or individual differences (Boyd et al., 2011).

³ For details, see (USDOE, 2013) ESEA Flexibility Request available at <http://www2.ed.gov/policy/eseaflex/approved-requests/trequestamended072413.pdf>

An additional area for future work is analysis of the relationship between a school's CVF profile and teacher retention as it relates to the variation in teacher quality (i.e., experience and education). While this study illustrates that a balanced CVF profile is important for a teacher's decision to leave/stay in general, it is not able to say whether CVF "balance" may have disproportionate impact on beginning teachers, who may, for example, be more responsive to working conditions than experienced teachers who may have limited employment options outside a low-performing school. Identification of teacher characteristics (effective versus ineffective teachers) or other working conditions that may specifically affect retention of high-quality teachers and CVF "balance" would provide policymakers with additional tools for alleviating outcome disparities between high-performing and low-performing schools. State-level administrative data sets that can match teachers both to students and to school characteristics are more appropriate for such analysis.

Finally, our findings are not causal – that is, that unbalance CVF profiles may cause teachers to leave, teachers leaving may cause an unbalanced CVF profile, or a third factor may simultaneously cause both an unbalanced CVF school profile and higher teacher retention. Therefore, it is important that more researchers examine the relationship between teacher retention and the various components of the CVF while also looking at how and why a given school's CVF profile might change over time. We also believe this relationship can be explored using personnel records and value-added data for reviewing teacher's impact on achievement in states or districts where school climate surveys (i.e., TELL Survey) are administered.

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APPENDIX A

TELL Tennessee Items Mapped onto the Competing Values Framework

Rational Goal Quadrant Item Scales

In the rational goal model, a climate of “production” is task-oriented and work-focused, one that motivates members to increase their output and accomplish stated goals. A climate exhibiting “direction” is one that foregrounds planning, goal setting, articulating objectives, and establishing clear expectations.

Production Scale

- Q6.1f In this school we take steps to solve problems.
- Q7.1e Teachers are held to high professional standards for delivering instruction.
- Q7.1k The faculty are recognized for accomplishments.

Direction Scale

- Q6.1g Teachers are effective leaders in this school.
- Q7.1a The faculty and leadership have a shared vision.
- Q7.1j The school improvement team provides effective leadership at this school.

Internal Process Quadrant Item Scales

In the internal process model, a climate exhibiting “coordination” is one focused on structure, and scheduling and is especially attentive to logistical and housekeeping issues. Regularly checking on performance and completing the concomitant paperwork are behaviors characteristic of a climate where “monitoring” is valued.

Coordination Scale

- Q2.1c Teachers are allowed to focus on educating students with minimal interruptions
- Q2.1e Efforts are made to minimize the amount of routine paperwork teachers are required to do.
- Q2.1g Teachers are protected from duties that interfere with their essential role of educating students.

Monitoring Scale

- Q7.1f The school leadership facilitates using data to improve student learning.
- Q8.1c Professional development offerings are data driven.
- Q9.1c Teachers use assessment data to inform their instruction.

Human Relations Quadrant Item Scales

In the human relations model: a climate of “facilitation” encourages teamwork and cohesiveness and sees to it that interpersonal conflict is managed effectively. A climate that values “mentoring” engages in the development of people through a caring, empathetic orientation.

Facilitation Scale

- Q6.1e The faculty has an effective process for making group decisions to solve problems.
- Q7.1b There is an atmosphere of trust and mutual respect in this school.
- Q7.1c Teachers feel comfortable raising issues and concerns that are important to them.

- **Mentoring Scale**
- Q7.1h Teachers receive feedback that can help them improve teaching.
- Q8.1e Professional development is differentiated to meet the needs of individual teachers.
- Q8.1j Professional development provides ongoing opportunities for teachers to work with colleagues to refine teaching practices.

Open Systems Quadrant Item Scales

In the open systems model: a climate of “innovation” values personal and group creativity and facilitates adaptation and change. Maintaining the organization's external legitimacy and obtaining external resources are the central concerns of climate where “brokering” is important.

Innovation Scale

- Q8.1h Teachers are encouraged to reflect on their own practice.
- Q9.1g Teachers are encouraged to try new things to improve instruction.
- Q9.1i Teachers have autonomy to make decisions about instructional delivery (i.e. pacing, materials and pedagogy).

Brokering Scale

- Q4.1b This school maintains clear, two-way communication with parents/guardians and the community.
- Q4.1c This school does a good job of encouraging parent/guardian involvement.
- Q8.1g Professional development provides teachers with strategies to involve families and other community members as active partners in their children's education.

Table 1

Descriptive Statistics for CVF Scale and Quadrant Scores and School Outcomes for All Sampled Schools and School Subgroups

Variables	Priority Schools (n = 30)		Norm Schools (n = 31)		Performance Schools (n = 30)		All Schools (N = 91)	
	M	SD	M	SD	M	SD	M	SD
Rational Goal Qdnt ($\alpha = .96$)	3.0	0.29	3.2	0.18	3.5	0.23	3.2	0.30
Production Scale ($\alpha = .91$)	3.1	0.27	3.2	0.18	3.5	0.21	3.3	0.28
Direction Scale ($\alpha = .92$)	3.0	0.34	3.1	0.19	3.4	0.25	3.2	0.32
Internal Process Qdnt ($\alpha = .89$)	3.0	0.21	3.1	0.15	3.3	0.19	3.1	0.22
Coordination Scale ($\alpha = .91$)	2.7	0.28	2.8	0.24	3.0	0.27	2.8	0.30
Monitoring Scale ($\alpha = .85$)	3.3	0.18	3.3	0.12	3.5	0.17	3.4	0.18
Human Relations Qdnt ($\alpha = .93$)	2.9	0.31	3.0	0.18	3.3	0.27	3.0	0.30
Facilitation Scale ($\alpha = .96$)	2.8	0.38	3.0	0.24	3.3	0.29	3.0	0.38
Mentoring Scale ($\alpha = .86$)	3.0	0.27	3.0	0.17	3.2	0.29	3.1	0.26
Open Systems Qdnt ($\alpha = .89$)	3.0	0.23	3.1	0.12	3.4	0.21	3.2	0.24
Innovation Scale ($\alpha = .85$)	3.1	0.19	3.2	0.11	3.4	0.21	3.2	0.21
Brokering Scale ($\alpha = .80$)	3.0	0.27	3.0	0.14	3.4	0.26	3.1	0.29
School Outcomes								
Percent Teacher Retention	60.5	19.6	85.9	9.3	91.5	6.0	79.4	18.6
Teacher Satisfaction Item Mean	2.9	0.3	3.2	0.2	3.3	0.2	3.2	0.3
School Math NCE	37.0	3.7	54.1	0.8	69.7	4.1	53.6	13.7
School Reading NCE	29.8	3.7	50.1	0.8	70.0	5.3	50.0	16.8
Percent Free/Reduced Lunch	95.67	2.78	70.32	12.48	20.11	18.64	62.13	33.96
CVF Sum of Balance Scores	1.53	0.86	1.71	0.90	2.43	0.90	1.89	0.96
	Yes	No	Yes	No	Yes	No	Yes	No
Percent CVF Balanced Profile	23.3	76.7	29.0	71.0	70.0	30.0	40.7	59.3

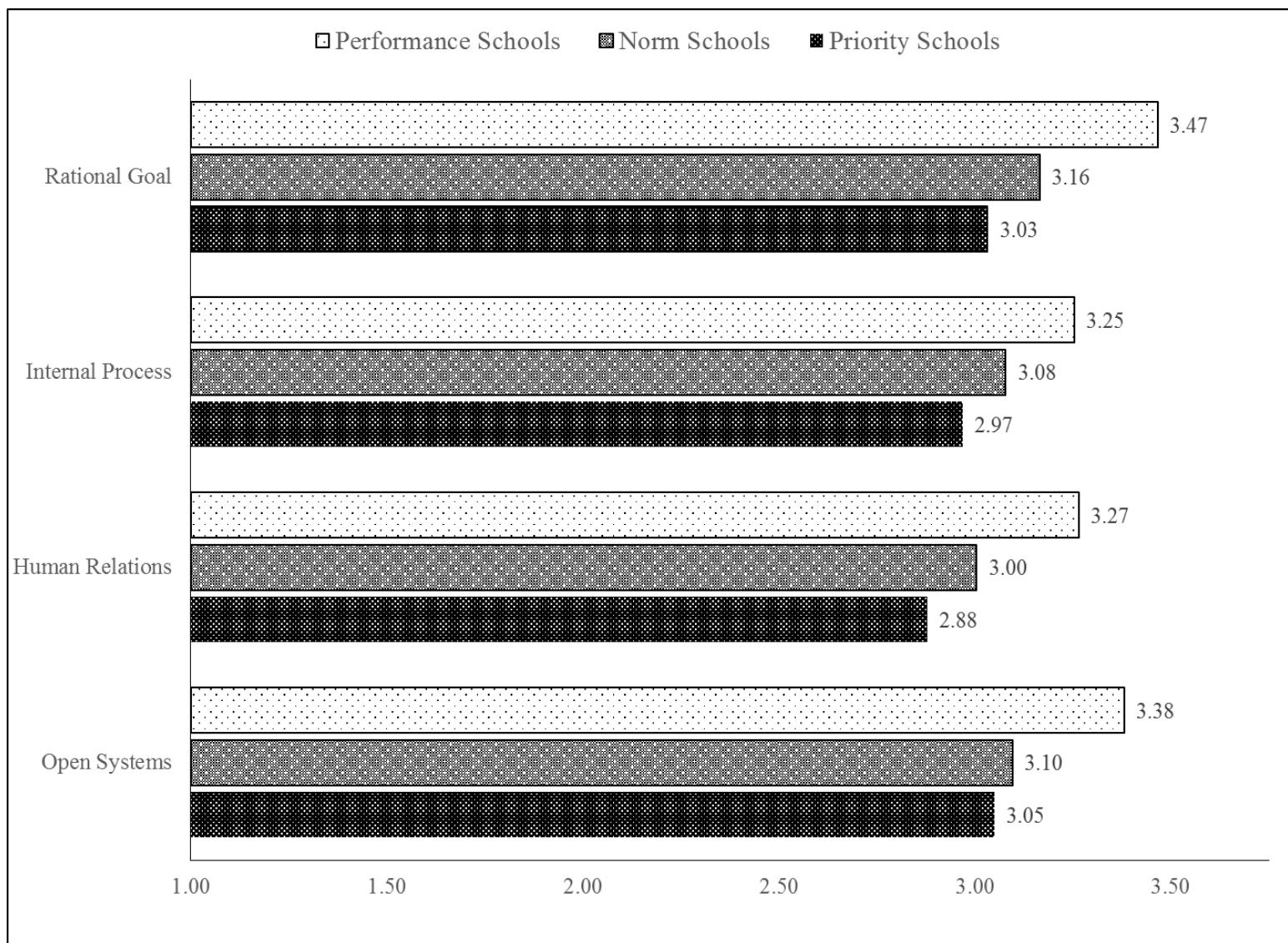


Figure 1. Bargraph of CVF Quadrant Means by School Achievement Level

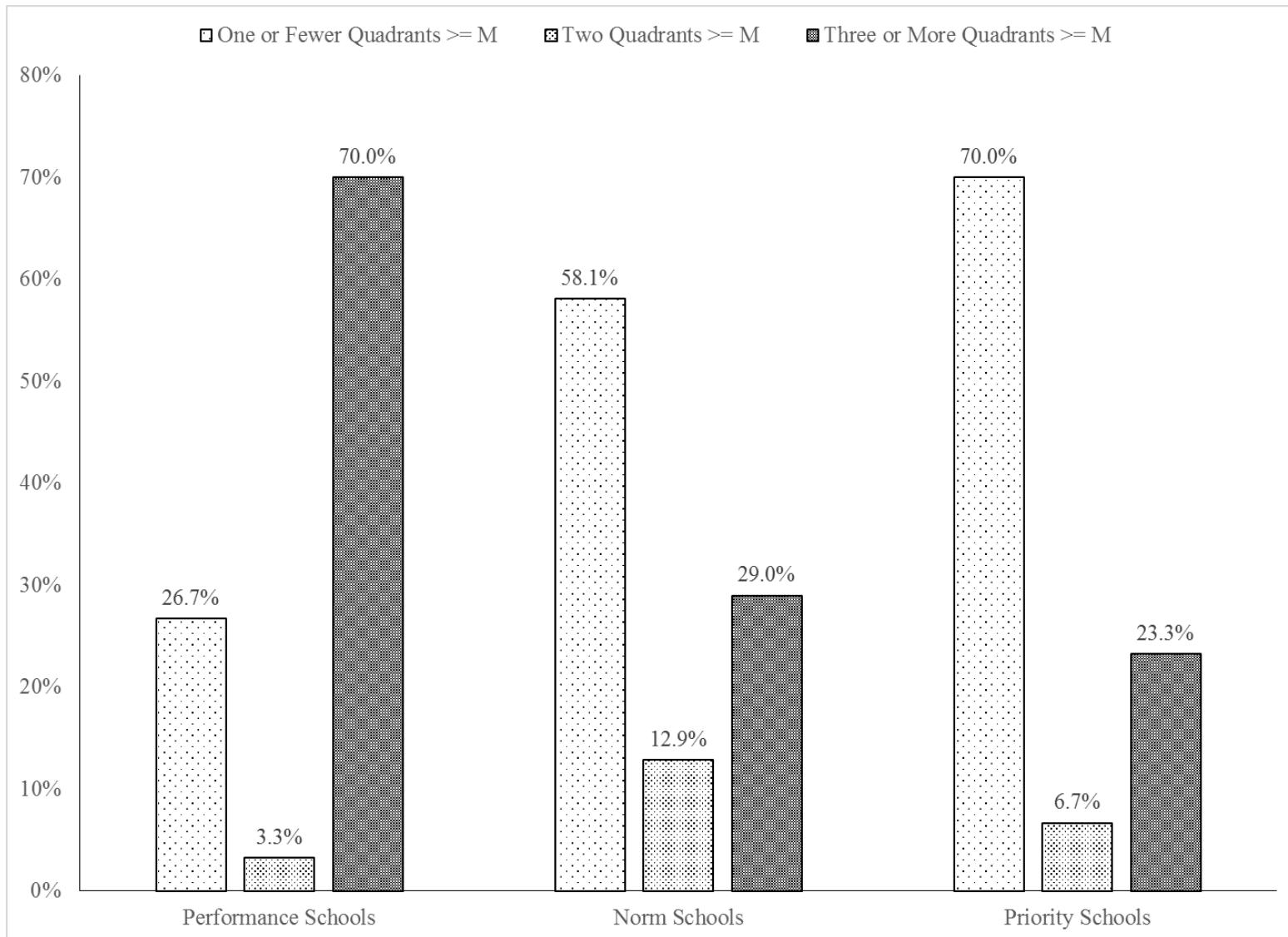


Figure 2. Bargraph of Balanced/Unbalanced CVF Profiles by School Achievement Level

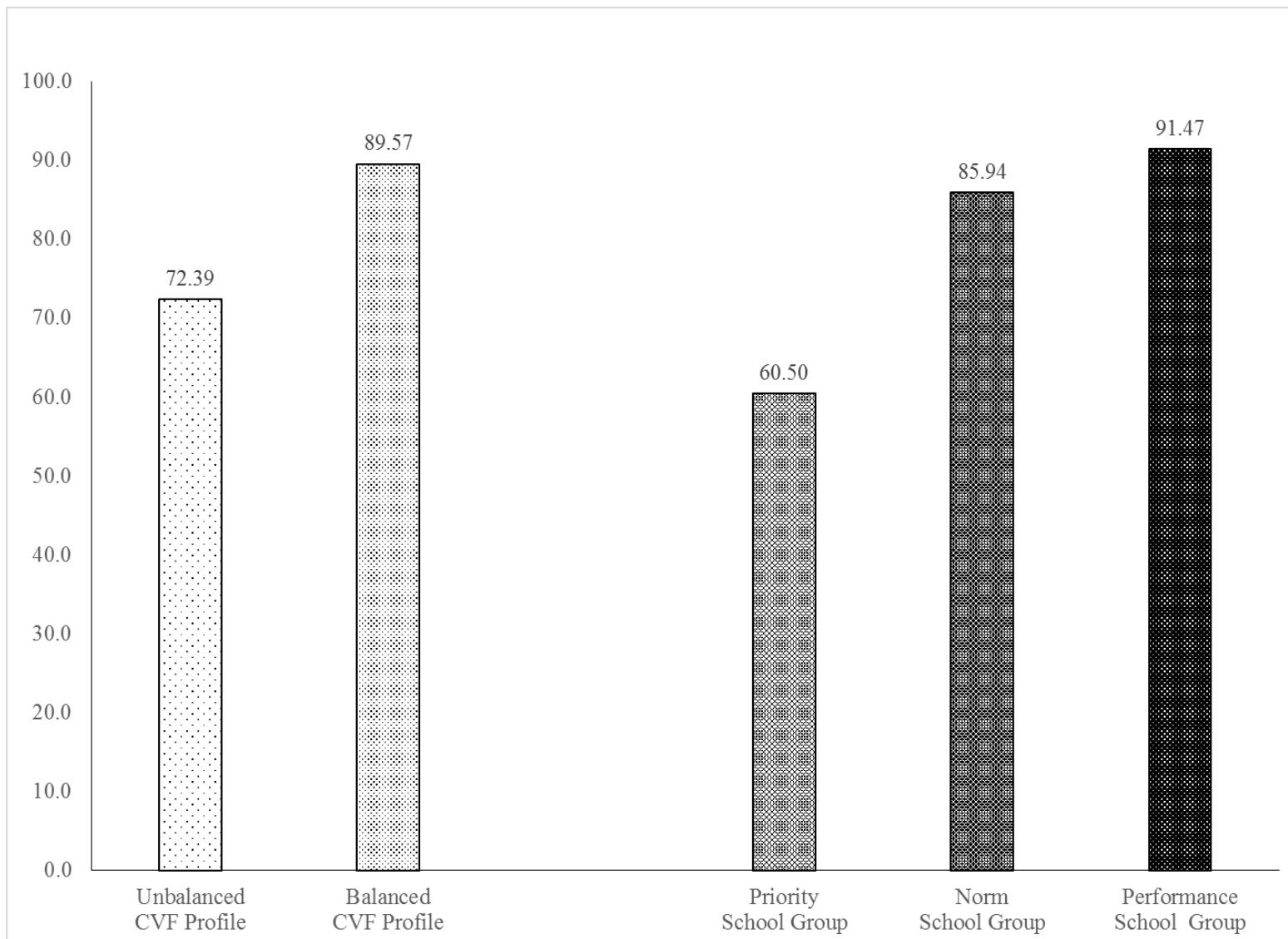


Figure 3. Mean percentages of teacher "stayers" by CVF profile and school achievement group.

Table 2

Analysis of Covariance/Analysis of Variance of Percent of Intended Teacher "Stayers" as a Function of School Achievement Group, CVF Balance Profile, with Percent of Students in Poverty as Covariate

Full Model: Source	df	SS	MS	F	p	η_p^2
Poverty (covariate)	1	102.05	102.05	0.71	.400	.008
School Achievement Group (SAG)	2	4687.65	2343.83	16.41	.000	.281
CVF Balance Profile (CVF_BP)	1	2218.74	2218.74	15.53	.000	.156
SAG X CVF_BP	2	539.19	269.59	1.89	.158	.043
Error	84	11998.77	142.84			
Model without Covariate: Source	df	SS	MS	F	p	η_p^2
School Achievement Group (SAG)	2	8320.14	4160.07	29.22	.000	.407
CVF Balance Profile (CVF_BP)	1	2286.50	2286.50	16.06	.000	.159
SAG X CVF_BP	2	534.05	267.02	1.88	.160	.042
Error	85	12100.82	142.36			
Main Effects Only Model: Source	df	SS	MS	F	p	η_p^2
School Achievement Group (SAG)	2	12063.04	6031.52	41.53	.000	.488
CVF Balance Profile (CVF_BP)	1	2133.96	2133.96	14.69	.000	.144
Error	87	12634.87	145.23			

Note. $r^2 = .595$. A focused comparison of group means revealed that the effect of CVF "balance" on the percent of intended faculty stayers was slightly more than a full standard deviation ($g = 1.02$). As regards school achievement group, the effect on percent of intended teacher stayers was found to be more than a standard deviation and a half when norm schools were compared to priority schools ($g = 1.65$) and over two standard deviations when performance schools were compared to priority schools ($g = 2.11$). Although Bonferroni-corrected post-hoc testing of the means suggested that norm and performance percentages of intended faculty stayers do not differ statistically, the effect size computed for this comparison was $g = 0.69$.